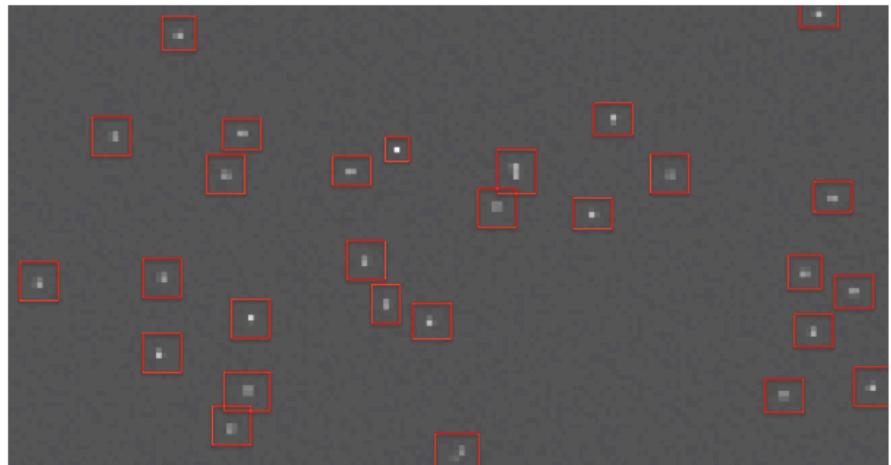
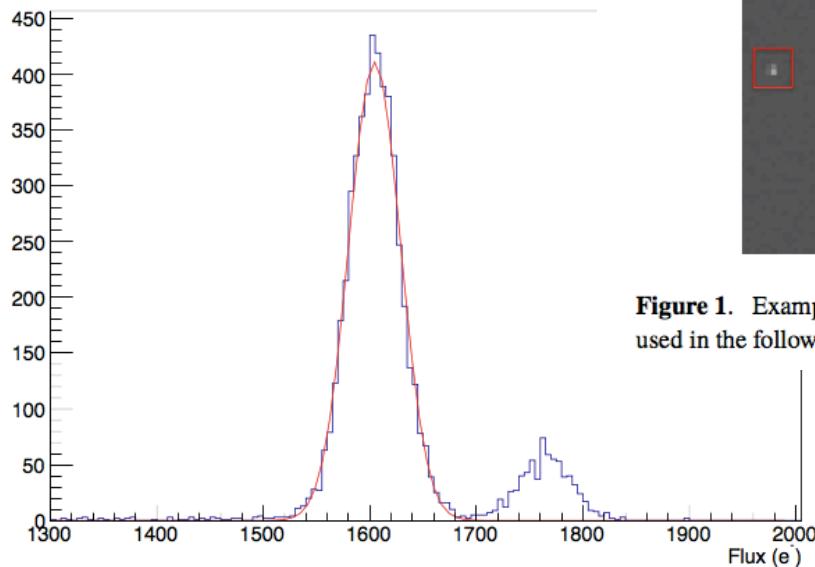


# CTE modeling

Daniel Yates, Andrei, Ivan  
Group meeting 9 May 2017

# CTE in Fe55 x-rays

- 5.9 keV

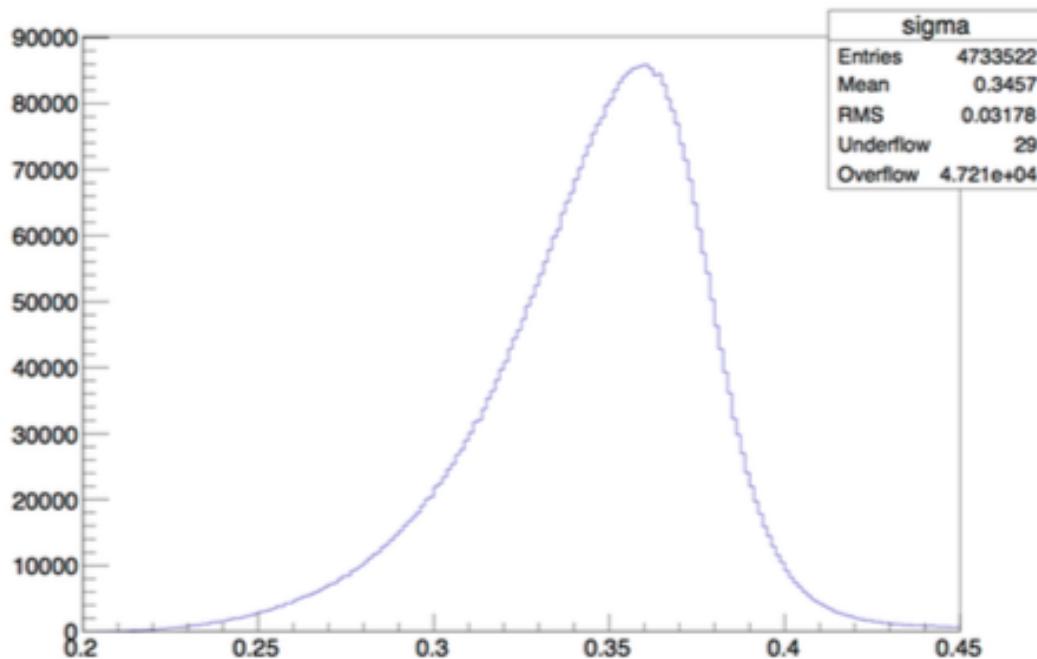


**Figure 1.** Examples of found x-ray hits in CCD with associated stamps, or footprints, which include pixels used in the following data analysis.

**Figure 8.** Flux distribution in the <sup>55</sup>Fe data in the first bin (least number of transfers) of the sensor section #11.

# Diffusion in CCD

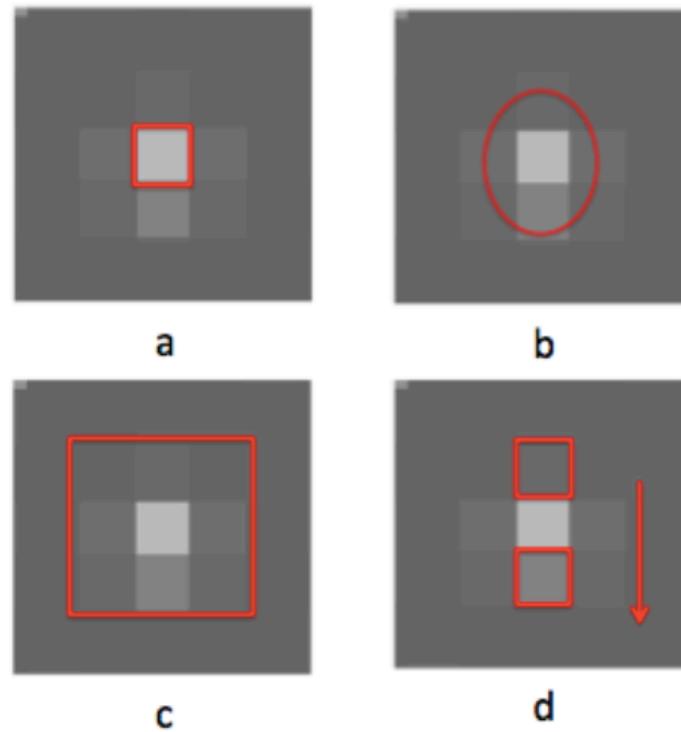
- 3.6 micron in 100 micron thick sensor



**Figure 4 Distribution of the PSF size (sigma, in pixels) in the fit.**

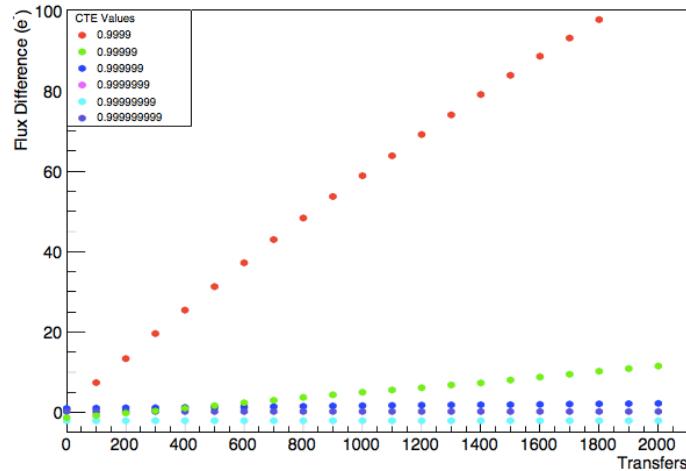
# New observables

MC simulations of Fe55 hits

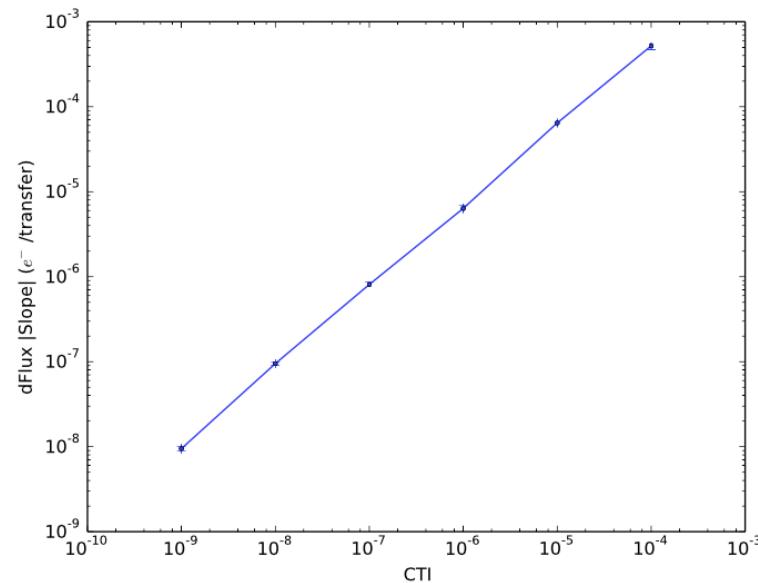


**Figure 4.** Four possible measurements of CTE. a) central pixel flux, b) hit ellipticity, c) integral of flux over the  $3 \times 3$  pixel region, d) flux difference between trailing and leading pixel (arrow indicates transfer direction).

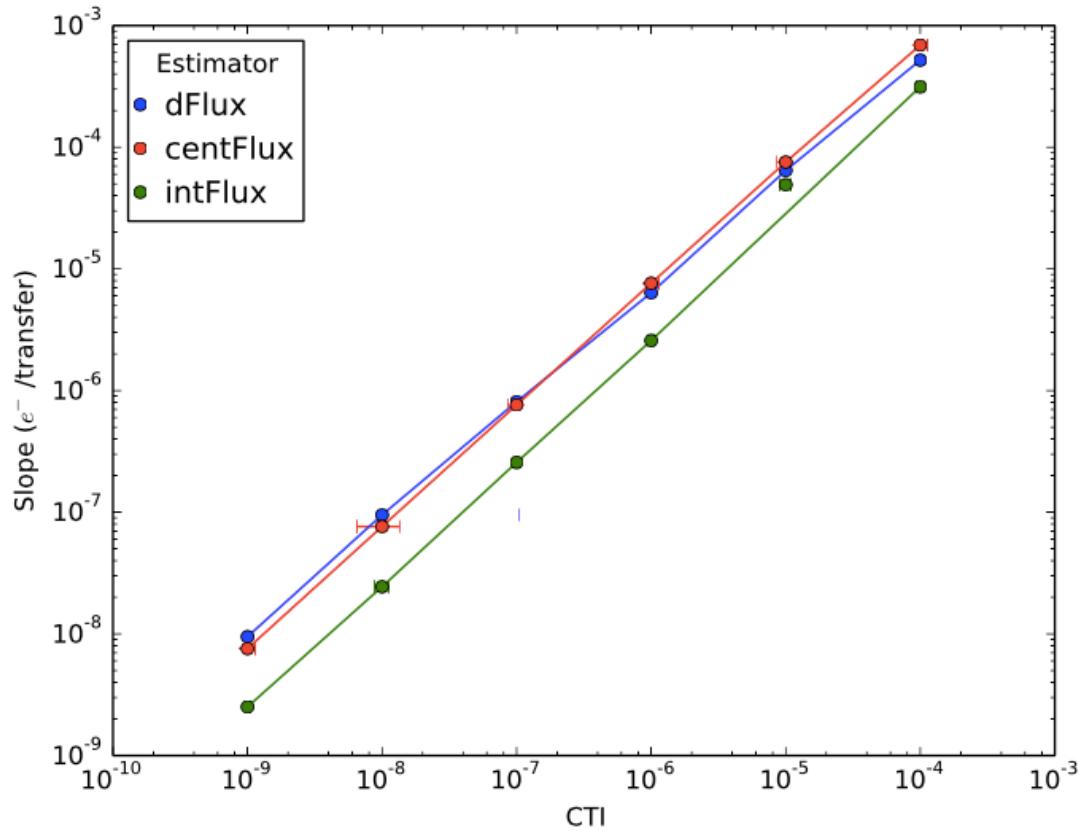
# dFlux vs transfers



**Figure 5.** Plot of Monte Carlo simulations of flux difference versus number of transfers for several CTE values.



**Figure 6.** Plot of slope for top/bottom pixel flux differential (dFlux) versus CTI in Monte Carlo simulations, see the text.



**Figure 7.** CTI as function of three observables based of differential flux (blue dots), central pixel flux (red dots) and integral flux (green dots) in Monte Carlo simulations, see the text.